

AMENDMENTS TO THE CLAIMS

1. (Currently amended) ~~Tree~~ A tree pruning apparatus including:

an elongate supporting body locatable along the trunk of a tree to be pruned;

a pruning assembly mounted on and drivable along said supporting body and comprising a plurality of pruning jaws movable ~~from~~ between an open position and a closed position substantially encircling the trunk; and

a plurality of blade ~~members~~ assemblies mounted on said jaws, each of said blade assemblies ~~and having cutting edges forming a substantially circumferential array when said jaws are in their closed position; and~~

~~actuator means associated with each said blade member; and~~

~~individual sensor means associated with each actuator means and operable~~ having a blade member with a cutting edge, an actuator adapted to move said blade member, and a sensor operably connected to said actuator to cause said actuator to move said blade member to dynamically maintain a selected clearance between the trunk and each said cutting edge.

2. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein ~~said elongate supporting body is mounted on a wheeled or tracked vehicle for locating the body adjacent the tree trunk~~ at least one of said jaws is of fixed shape.

3. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein ~~said vehicle is selected from powered and hand-operated vehicles~~ jaws move within the same horizontal plane.

4. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said ~~elongate supporting body mounts said pruning assembly for movement by means selected from a track or moving chain~~ actuators are independently operable.
5. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 4, wherein said ~~pruning assembly is urged along a vertical track by means selected from a chain drive, ram, hydraulic motor, pneumatic motor or electric motor~~ 1, wherein said blade assemblies on one of said jaws are in fixed position relative to one another.
6. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said jaws of the pruning assembly comprise a pair of jaws hinged together.
7. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 6, wherein one of said jaws is mounted for movement on said elongate supporting body.
8. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said jaws are each pivoted from a carrier portion engaging said elongate supporting body.
9. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said jaws are pneumatically operable ~~by means selected from manual means, hydraulic actuation and pneumatic actuation.~~

10. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein said sensor ~~means~~ comprises a mechanical sensor arm ~~associated with the actuator means for each blade member and~~ adapted to move along the trunk ahead of said blade member.

11. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein said sensor ~~means comprises electronic or optoelectronic distance sensing means associated with the actuator means for each blade member~~ is electronic and adapted to send a signal to said actuator.

12. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein said actuator ~~means are selected from electric, pneumatic or hydraulic actuators~~ is a pneumatic actuator.

13. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 12, wherein said actuator ~~means are pneumatic actuator assemblies comprising a pneumatic actuator working against a spring~~ further comprising a spring operably connected to said sensor, said spring working against said pneumatic actuator.

14. (Currently amended) ~~Tree~~ The tree pruning apparatus according to Claim 1, wherein said pruning assembly is operable to be driven along said elongate body member in use at a linear blade edge velocity of from approximately 1 to 2.5 m/sec.

15. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 13, wherein said pneumatic actuator and spring comprise a sensor/actuator assembly, wherein said blade member is urged toward the trunk against the bias of said spring by said pneumatic actuator which is continuously operable in response to ~~a follower interacting with the tree trunk~~ as said sensor.

16. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said blade members have arcuate cutting edges.

17. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 16, wherein said cutting edges ~~describe in combination~~ form a substantially circular cutting edge in ~~plan when in the closed position.~~

18. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 16, wherein said blade members are arrayed in ~~two or more axially displaced planes, whereby said cutting edges may overlap in plan~~ overlapping arrangement when in the closed position.

19. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 1, wherein said blade members have a cutting edge of chisel-edged form with a substantially sheer face toward the trunk in use and a bevel from the cutting edge to the thickness of the blade body.

20. (Currently amended) ~~Free~~ The tree pruning apparatus according to Claim 19, wherein said sheer face is relieved along said cutting edge at a relief angle of up to 6°C.

21. (Currently amended) A tree pruning method including ~~the steps of:~~

locating an elongate supporting body alongside the trunk of a tree to be pruned;

closing pruning jaws of a pruning assembly mounted on and drivable along said supporting body to substantially encircle the trunk, said jaws mounting a plurality of blade members having cutting edges ~~forming a substantially circumferential array, the blade members being associated with respective actuator means and individual sensor means associated with each actuator means and operable to dynamically maintain a selected clearance between the trunk and each said cutting edge; and~~

driving said pruning assembly along said elongate supporting body to prune said tree; and
independently moving two adjacent blade members relative to one another as the pruning assembly is driven along the elongate supporting body.

22. (Currently amended) ~~Tree~~ A tree pruning apparatus including:

an elongate supporting body locatable alongside the trunk of a tree to be pruned;

a pruning assembly mounted on and drivable along said supporting body and comprising a plurality of pruning jaws movable ~~from~~ between an open position and a closed position substantially encircling the trunk;

a plurality of blade members mounted on said jaws, said blade members each ~~and~~ having cutting edges ~~in circumferentially overlapping relation when said jaws are in their closed position;~~

~~actuator means associated with each said blade member~~ a plurality of actuators operably connected to said blade members; and

~~individual sensor means associated with each actuator means and operable~~ a plurality of electronic sensors, said sensors being adapted to signal said actuators to move said blade members to dynamically maintain a selected clearance between the trunk and each said cutting edge edges.

23. (Currently amended) A tree pruning method including the steps of:

locating an elongate supporting body alongside the trunk of a tree to be pruned;

closing pruning jaws of a pruning assembly mounted on and drivable along said supporting body to substantially encircle the trunk, said jaws mounting a plurality of blade members having cutting edges ~~in circumferentially overlapping relation, actuator means associated with each said blade member, and individual sensor means associated with each actuator means and operable to dynamically maintain a selected clearance between the trunk and each said cutting edge; and~~

driving said pruning assembly along said elongate supporting body ~~to prune said tree;~~

electronically sensing the trunk of the tree as the pruning assembly is driven along the elongate supporting body; and

individually moving one or more of said blade members in response to a signal from the electronic sensing.